April 26, 1955 T. A. BARRENTINE 2,706,879

ROTARY STALK CUTTING MACHINE

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Fig. 1.

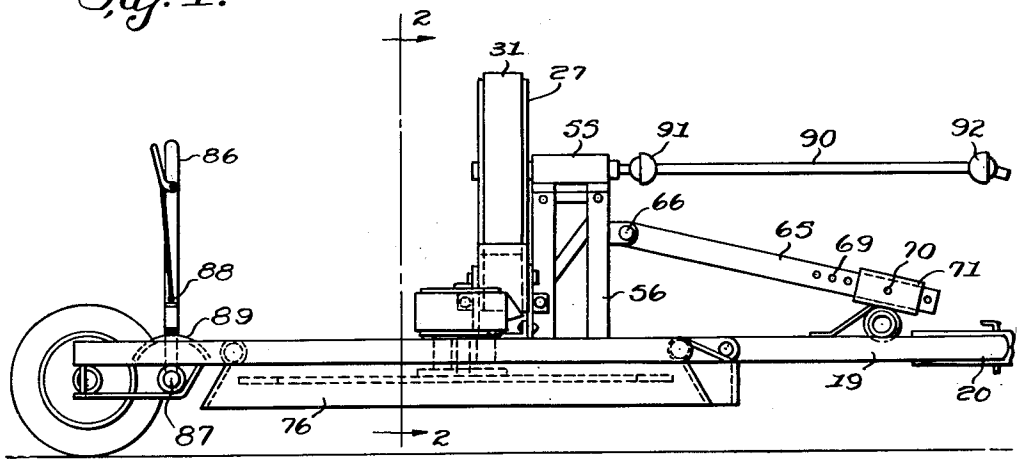

Fig. 2.

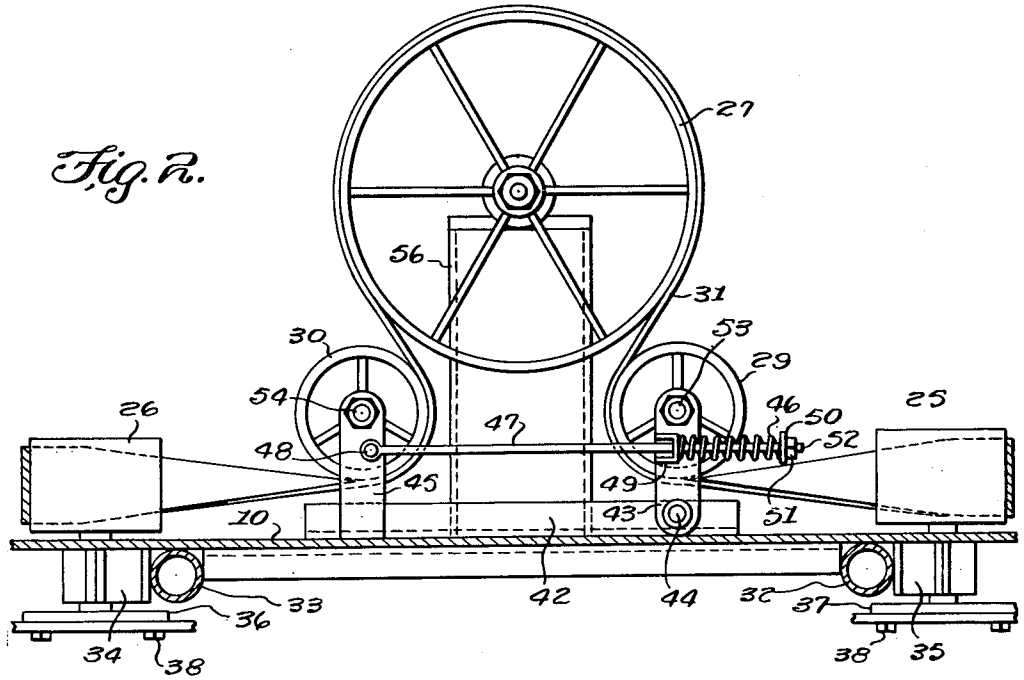

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Fig. 3.

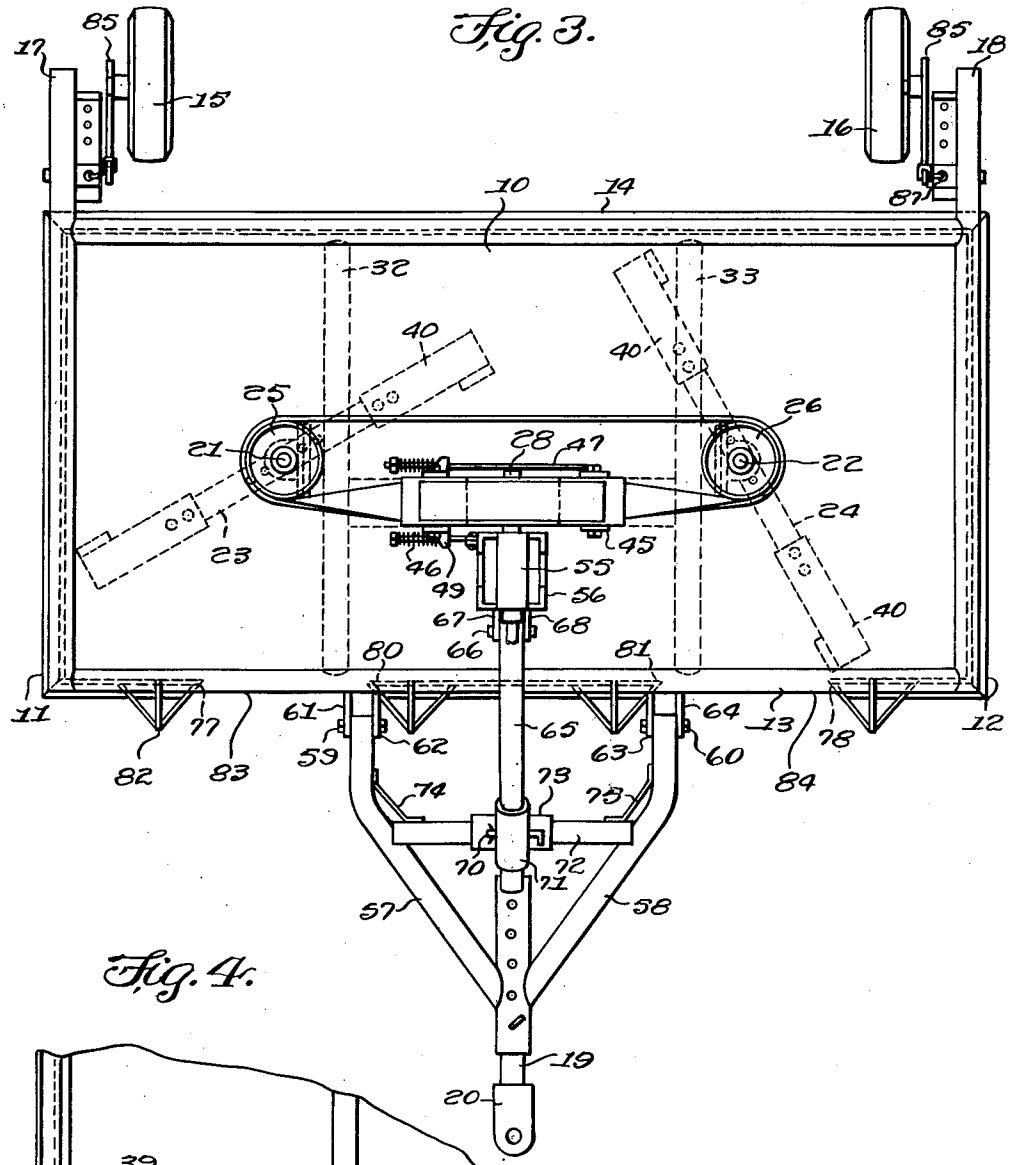
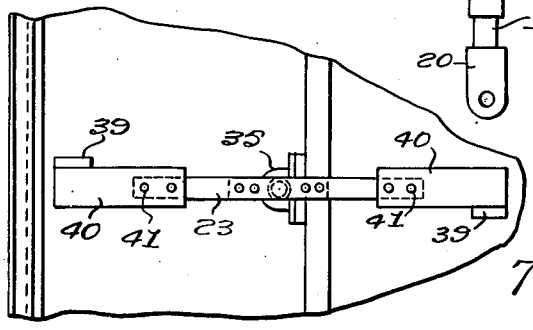


Fig. 4.



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ROTARY STALK CUTTING MACHINE

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1 Claim. (Cl. 55—62)

This invention relates to mowing machines of the type using cutters rotating in a horizontal plane and mounted on a tractor drawn frame, and in particular a flat substantially rectangular shaped frame having ground engaging wheels adjustably mounted on one side and a tongue extended from the opposite side and having spaced vertically disposed shafts with cutter bars carried on the lower ends and with the shafts rotated with a power take-off of a tractor to which the tongue of the frame is connected.

The purpose of this invention is to provide means for mounting a plurality of rotary cutters on a frame whereby the cutters are actuated with a common endless belt and wherein the belt is adapted to be driven by the power take-off of a towing vehicle.

Various types of horizontally rotatable cutters have been used on mowing machines and other devices have been used for operating parts of machines from the power take-off of a tractor, however, for use in cutting corn stalks and other trash in a field where the dust wears gears and other operating parts, it has been found desirable to provide means for driving the cutting elements with an endless belt that is adapted to be driven directly from the power take-off of a tractor. With this thought in mind this invention contemplates a horizontally disposed frame having rotary cutters journaled therein in which the cutters are actuated by a comparatively large driving pulley with an endless belt trained over the pulley and extended around take-up idlers and also pulleys on the cutting elements.

The object of this invention is, therefore, to provide an arrangement of pulleys wherein spaced vertically disposed cutter carrying shafts may be driven with a horizontally disposed shaft through an endless belt and wherein tension is maintained in the belt continuously.

Another object of the invention is to provide a stubble cutting machine having cutters rotating in horizontal planes and driven through an endless belt from a power take-off of a tractor in which means is provided for adjusting the elevation of the cutters and also the elevation of connecting means of the device to a tractor.

A further object of the invention is to provide a stubble cutting device having cutters rotating in horizontal planes and driven from the power take-off of a tractor through an endless belt in which the device is of a simple and economical construction.

With these and other objects and advantages in view the invention embodies a horizontally disposed rectangular shaped frame having a tongue adjustably mounted on one side, ground engaging wheels adjustably mounted on and extended from the opposite side, spaced vertically disposed shafts having cutter bars on the lower ends journaled in the frame, a driving pulley mounted on a horizontally disposed shaft journaled on the frame, and a belt trained over the pulley, around pulleys on the shafts and over take-up idler pulleys for driving the cutter carrying shafts by the power take-off of a tractor.

Other features and advantages of the invention will appear from the following description taken in connection with the drawings, wherein:

Figure 1 is a side elevational view illustrating the improved rotary cutter attachment.

Figure 2 is a section taken on line 2—2 of Fig. 1 with parts broken away and showing the parts on an enlarged scale.

Figure 3 is a plan view showing the general arrangement of the attachment.

Figure 4 is a detail looking upwardly toward the under side of one of the cutter bars illustrating the mounting of the cutting blade on the bars.

Referring now to the drawings wherein like reference characters denote corresponding parts the improved corn stalk and other stubble cutter of this invention includes a horizontally disposed base plate **10** mounted on a rectangular shaped frame or platform having tubular end beams **11** and **12** connected with a tubular front beam **13** and a similar rear beam **14**. The frame is provided with ground engaging wheels **15** and **16** which are adjustably mounted on brackets **17** and **18**, respectively, a tongue **19** pivotally mounted on the front beam **13** and having a hinge **20** on the extended end, vertically disposed shafts **21** and **22** journaled therein and having cutter bars **23** and **24**, respectively carried by the lower ends and pulleys **25** and **26** mounted on the upper ends, a driving pulley **27** mounted on a horizontally disposed shaft **28**, idler pulleys **29** and **30** also journaled therein and a belt **31**.

The frame is provided with intermediate beams **32** and **33** on which bearings **34** and **35**, respectively in which the shafts **21** and **22** are journaled, are mounted, and the lower ends of the shafts **21** and **22** are provided with brackets **36** and **37** to which the cutter bars **23** and **24** are secured with bolts **38** and, as illustrated in Fig. 4 cutting blades **39** carried by plates **40** are secured to the ends of the cutter bars **23** and **24** with bolts **41**.

As illustrated in Fig. 2 the pulleys **25** and **26** are positioned above the base plate **10** and the idler pulleys **29** and **30** are mounted on the beam **42** positioned on the base plate. The idler **29** is mounted in a bracket **43** that is secured to the beam **42** with a bolt **44**, and the idler **30** is mounted in the bracket **45** that is urged toward the bracket **43** with springs **46** on rods **47** one of the ends of which are connected to the bracket **45** with bolts **48** and the other of the ends of which extend through clips **49** on the bracket **43**, the ends of the springs **46** bearing against the clips **49** and also against washers **50** that are held by nuts **51** on the threaded ends **52** of the rods **47**.

The idler pulley **29** is journaled in the bracket **43** with a stud **53** and the idler **30** is journaled in the bracket **45** with a similar stud **54**. The driving pulley **27** which is mounted on the shaft **28** is journaled on the frame through a bearing **55** on the upper end of a bearing stand **56** which is mounted on the frame. With the idler pulley positioned, particularly as illustrated in Fig. 2 continuous tension is maintained on the belt whereby the vertically disposed shafts of the cutter bars are driven continuously however, should a cutter strike a rock or other fixed obstruction slippage between the belt and pulley is possible thereby preventing breaking of the cutter bar.

The tongue **19** is formed with V-shaped outwardly extended bars **57** and **58** and the ends of the bars are pivotally connected to the front beam **13** with bolts **59** and **60**, respectively, the bolt **59** extending through ears **61** and **62** and the bolt **60** extends through similar ears **63** and **64**.

The tongue **19** is retained in adjusted positions with an arm **65**, pivotally mounted on the bearing stand **56** with a bolt **66**, which extends through ears **67** and **68** on the bearing stand. The extended end of the arm **65** is provided with spaced openings **69** through which a bolt **70** in a sleeve **71** extends and, as illustrated in Figs. 1 and 3 the sleeve **71** is mounted on a cross bar **72** with a similar sleeve **73**.

The ends of the cross bar are secured to the bars **57** and **58** of the tongue with braces **74** and **75**.

The frame of the machine is provided with a depending flange or skirt **76** which extends from a point **77** on the front beam **13** around the ends and across the back to a corresponding point **78** at the opposite side of the frame, and a similar flange or skirt **79** extends from the point **80** to the point **81**.

The front bar **13** is provided with V-shaped guides **82** which extend forwardly from the ends of the flange or skirt providing stalk or stubble receiving gaps **83** and **84** at the front of the frame and at the sides of the tongue.

The ground engaging wheels **15** and **16** are journaled on the ends of arms **85** which extend from hand levers **86** that are pivotally mounted in the brackets **17** and **18** with pins **87** and with the hand lever **86** provided with

conventional latches **88** that coact with gear segments **89** the elevation of the ground engaging wheels is readily adjustable.

With the parts arranged in this manner the tongue **19** may be attached with the hitch **20** to the draw bar of a tractor and the power take-off of the tractor connected to the shaft **28** on which the driving pulley **27** is mounted with a connecting shaft **90** the ends of which are provided with universal joints **91** and **92.**

By this means the driving pulley **27** is rotated by the power take-off of the tractor and the belt **31** through the idler pulleys **29** and **30** and the pulleys **25** and **26** rotates the cutter bar carrying shafts **21** and **22** whereby the cutters are rotated in horizontal planes.

It will be understood that modifications, within the scope of the appended claim, may be made in the design and arrangement of the parts without departing from the spirit of the invention.

What is claimed is:

In a rotary stalk cutter, a horizontally disposed base plate, brackets extending rearwardly from said base plate, hand levers pivotally connected to said brackets, coacting latches and gear segments for maintaining said levers immobile in their adjusted positions, arms extending from the lower ends of said levers, wheels journaled on the ends of said arms, a pair of vertically disposed spaced parallel shafts journaled on said base plate, power means for rotating said shafts, cutter bars mounted on the lower ends of said shafts and positioned below said base plate, a beam extending across the front of said base plate, a

tongue arranged forwardly of said base plate, said tongue including a pair of bars having their front portions arranged angularly in a V-shape and the rear ends of said bars being arranged in spaced parallel relation with respect to each other and pivotally connected to said beam, a bearing stand extending upwardly from said base plate, an arm pivotally connected to said bearing stand and having a first sleeve adjustably mounted on its front end, a second sleeve extending transversely below said first sleeve and secured thereto, a cross bar extending through said second sleeve and secured to the inclined front portions of the bars of said tongue, an outwardly extending skirt depending from said base plate, said skirt extending from a point at the front of said base plate around the sides and back of said base plate to a second point on the front of the base plate, a flange depending from the front of said base plate and spaced from said skirt to define openings therebetween, the lower edges of said skirt and flange being spaced below said cutter bars, and V-shaped guides extending forwardly from said flange and skirt.

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